REMARKS

Claims 2-18, 20, 22, 23, 25, 26, and 29 are pending in this application, with Claims 2, 22, 25, 26, and 29 being independent. Claims 2-4, 12, 15-17, 22, 23, and 26 have been amended. Support for the amendments to Claims 2-4, 12, 16-17, and 22 to recite ammonium-containing compound filler "particles" can be found throughout the specification, for example, at page 5, lines 13-18. Support for the amendment to Claim 3 to recite that the ammonium-containing compound filler particles comprise "an ammonium-alkaline earth metal salt" can be found throughout the specification, for example, at page 4, line 23. No new matter has been added.

Applicants gratefully acknowledge the indication in the Official Action that Claims 25 and 29 are allowed and that Claims 15 and 23 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 15 and 23 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reconsideration of the outstanding rejections in view of the foregoing amendments and following remarks is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

- I -

Claims 2, 3, 5-12, 14, 18, 20, and 22 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,060,674 ("Brown"). The rejection is respectfully traversed since the monoammonium phosphate disclosed in Brown is water soluble and would not be capable of acting as filler ***particles*** of a

wrapper. (See Column 4, Lines 1-19, of U.S. Patent No. 5,143,098, which disclose monoammonium phosphate as being water soluble).

Claim 2 recites a wrapper of a smoking article of an electrical smoking system wherein tobacco is contained by the wrapper, the wrapper comprising a cellulosic web material and at least one filler therein, the filler being effective to reduce the content of gaseous components in the smoke produced upon combustion/pyrolysis of the smoking article in the electrical smoking system, wherein the filler includes an ammonium-containing compound filler ***particles*** in an amount effective to reduce aldehyde content in the mainstream smoke produced upon combustion/pyrolysis of the smoking article. Brown does not disclose a wrapper that includes ammonium-containing compound filler ***particles*** in an amount effective to reduce aldehyde content in the mainstream smoke produced upon combustion/pyrolysis of the smoking article. The electrical smoking system does not produce sidestream smoke.

Claim 22 recites a cigarette of an electrical smoking system comprising a tobacco web surrounding a tobacco rod, a paper wrapper surrounding the tobacco web, and an optional filter at one end of the cigarette, the paper wrapper comprising a cellulosic web material and at least one filler therein, the filler being effective to reduce the content of gaseous components in the smoke produced by combustion/pyrolysis of the cigarette in the electrical smoking system, wherein the filler includes an ammonium-containing compound filler ***particles*** in an amount effective to reduce aldehyde content in the mainstream smoke produced upon combustion/pyrolysis of the cigarette. Brown does not disclose a cigarette of an electrical smoking system having a wrapper that includes ammonium-containing compound filler ***particles*** in an amount effective to reduce aldehyde content in the

mainstream smoke produced upon combustion/pyrolysis of the smoking article. The electrical smoking system does not produce sidestream smoke.

Brown Is Non-Analogous Prior Art

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). MPEP § 2141.01(a).

Applicant respectfully submits that Brown is nonanalogous art to the present claims. Brown is directed to an improved wrapper and resulting smoking article that materially reduce the quantity of sidestream smoke of a traditional lit-end cigarette. (See Column 1, Lines 18-20). The presently claimed electrical smoking systems do not produce sidestream smoke. (See commonly assigned U.S. Patent No. 5,269,327, column 1, at lines 53-55, and U.S. Patent No. 5,144,962, column 1, at lines 14-16 ("electrically-heated articles do not produce a visible aerosol between puffs")).

As such, Brown may not be relied upon as a basis for rejection of the present claims. One of ordinary skill would not resort to the teachings of Brown, as Brown is not reasonably pertinent to the particular problem with which the inventor was concerned, formation of aldehydes during actuation of an electrically heated smoking article, which does not produce sidestream smoke. Accordingly, because Brown is non-analogous prior art, the rejection should be withdrawn.

Ammonium-Containing Compound Filler Particles

As disclosed at page 4, line 24 – page 5, line 2, of the present application,

> It is preferred that the ammonium-containing compound have a low solubility in water so as to be compatible with conventional papermaking processes, e.g., the filler is substantially insoluble in a aqueous dispersion containing ingredients of the paper such as flax, etc. That is, the ammonium-containing compound should be stable enough in a papermaking process to survive intact as filler in the final paper product. This includes sufficient thermal stability to survive the drying steps in the papermaking process.

As further disclosed at page 5, lines 13-18, of the present application,

> Ammonium-containing compounds considered useful as filler materials have a range of surface areas, a range of particle sizes (mostly in the micron range), possess appropriate opacity, have low solubility in water (required for papermaking), and possess other properties that are considered desirable in fillers for cigarette papers. For purposes of a filler for cigarette paper, the filler preferably has a particle size below 25 μm, more preferably below 10 μm.

In contrast, Brown relates to a wrapper which contains a carboxylic acid salt, preferably a nonhydroxy acid such as a succinic acid salt, as well as sodium carboxymethyl cellulose, and in preferred embodiments may include a burn modifier such as monoammonium phosphate. (Column 2, Lines 14-28). Brown further discloses that "[m]anufacture of the wrapper materials may be accomplished using standard papermaking processes." (Column 6, Lines 32-35). The water soluble monoammonium phosphate disclosed by Brown would not survive intact through standard papermaking processes so as to be present as ammonium-containing compound filler ***particles*** in the final paper product. Additionally, the burn modifier of Brown is not disclosed as being effective to reduce aldehydes.

The Official Action asserts, "While there may be no specific articulation, in Brown et al, that [monoammonium phosphate] is provided in an amount effective to reduce aldehyde content, the Examiner believes that this is obviously the case."

(Official Action at Page 3). Specifically, referring to column 3, lines 59-62 of Brown, the Official Action contends that "Brown et al states that the particular paper compositions of its invention function by avoiding the production of aldehydes during smolder of the cigarette." Thus, Brown seeks to avoid producing aldehydes, rather than using filler ***particles*** effective in reducing aldehydes present in mainstream smoke.

The Official Action takes the position,

> [T]he various additives [in Brown], including the burn modifier, act to reduce the content of aldehyde in the cigarette smoke. Even though Brown et al may not mention that it is the monoammonium phosphate that reduces the aldehyde content, it follows that this compound would effectuate this result to some extent since it is well-known/evident that when heated at temperatures reached during smoking, ammonium salts release ammonia gas (in addition to carbon dioxide and water), which then would reduce the level of aldehyde in the cigarette smoke by chemical reaction. (This theory is even clear from Applicant's Table 1 on page 8 of the instant specification). Therefore, it follows that the monoammonium phosphate would contribute to the reduction of the aldehyde content in the smoke generated by the cigarette of Brown et al. (Official Action at Page 3).

Applicants respectfully disagree with the Examiner's position. As discussed at Column 3, Line 58, through Column 4, Line 6, of Brown,

> Salts of hydroxy acids, under pyrolytic conditions obtained during smoulder, may eliminate water across the appropriate carbon-to-carbon bond. This elimination could result in an unsaturated linkage which, through subsequent oxidative cleavage, could generate the low molecular weight aldehydes ... that are known irritants. On the other hand, a salt of a non-hydroxy acid such as succinic acid would not be expected to favor production of such irritants.

Thus, "the particular paper compositions" referred to by Brown that "function by avoiding the production of low molecular weight aldehydes ... during smoulder" (Column 3, Lines 58-62) are those containing a carboxylic acid salt, preferably a nonhydroxy acid such as a succinic acid salt.

Establishing a *Prima Facie* Case of Obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP § 2142.

Applicants respectfully submit that Brown does not disclose or suggest all the claim limitations. As noted above, Brown is directed to an improved wrapper and resulting smoking article that materially reduce the quantity of sidestream smoke of a traditional lit-end cigarette. Brown teaches use of monoammonium phosphate to reduce sidestream smoke, which is unsuggestive of a combination including: 1) an ammonium-containing compound filler particles in an amount effective to reduce aldehyde content in the mainstream smoke produced upon combustion/pyrolysis of the smoking article, and 2) an electrical smoking systems that does not produce sidestream smoke.

Brown does not disclose or suggest a wrapper of a smoking article of an electrical smoking system such as described in commonly assigned U.S. Patent No. 5,692,525 (cited in Applicants' specification at page 6, line 29, through page 7, line 1). Brown does not disclose or suggest a cigarette of an electrical smoking system,

which comprises a tobacco web surrounding a tobacco rod, and a paper wrapper surrounding the tobacco web, as recited in Claim 22.

Applicants further respectfully submit that the assertion in the Official Action that Brown provides monoammonium phosphate in an amount effective to reduce aldehyde content, though without specific articulation of such, is not found in the prior art, but rather is impermissibly based on applicant's disclosure. Specifically, the Official Action refers to Table 1 on page 8 of the ***present application*** in support of the allegedly well-known theory related to why Brown "may not mention that it is the monoammonium phosphate that reduces the aldehyde content." (Official Action at Page 3).

Impermissible Grounds for Rejection

So long as a judgment on obviousness takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971); MPEP § 2145.

Applicants respectfully submit that the Official Action has impermissibly resorted to "hindsight" based upon Applicants' disclosure. Specifically, the assertion in the Official Action that the theory that "when heated at temperatures reached during smoking, ammonium salts release ammonia gas (in addition to carbon dioxide and water), which then would reduce the level of aldehyde in the cigarette smoke by chemical reaction ... ***is even clear from Applicant's Table 1 on page 8 of the instant specification***" (emphasis added) (Official Action at Page 3) is not based on

teachings in the prior art. Rather, the Official Action cites Applicants' disclosure to support the rejection.

Reliance on Scientific Theory

When an examiner relies on a scientific theory, evidentiary support for the existence and meaning of that theory must be provided. *In re Grose*, 592 F.2d 1161, 201 USPQ 57 (CCPA 1979); MPEP § 2144.02. Further, obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature is later established. *In re Rijckaert*, 9 F.2d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); MPEP § 2141.02(V).

With regard to the assertion in that "it is well-known/evident that when heated at temperatures reached during smoking, ammonium salts release ammonia gas (in addition to carbon dioxide and water), which then would reduce the level of aldehyde in the cigarette smoke by chemical reaction" (Official Action at Page 3), Applicants respectfully submit that evidentiary support for the existence of that scientific theory must be provided. *See Grose, Id.*

In response, the Official Action cites U.S. Patent No. 6,701,936 ("Shafer"), which claims priority to provisional application No. 60/203,302, filed on May 11, 2000. Applicants point out that the present application claims priority to U.S. Application Nos. 09/361,988, filed on July 28, 1999, and 09/399,159, filed on September 20, 1999. Accordingly, as May 11, 2000, does not precede the claimed priority date(s) of the present application, July 28, 1999, and September 20, 1999, Applicants respectfully submit that Shafer may not be cited as a prior art reference against the present application.

For at least all of the above-noted reasons, Applicants respectfully submit that Claims 2, 3, 5-12, 14, 18, 20, and 22 are patentable over Brown. Accordingly, Applicants respectfully request that this rejection be withdrawn.

- II -

Claims 2-6, 12-14, 16, 17, and 26 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,096,539 ("Allan"). The rejection is respectfully traversed.

Allan does not relate to a smoking article wrapper. Rather, Allan relates to a filled paper composition wherein the filler is used to decrease cost and control opacity (Column 1, Lines 26-59) and for purposes of increasing strength of the paper the filler is an insoluble precipitate predominantly located within the cell wall of never-dried cellulosic pulp fibers. (Column 1, Lines 12-15). Allan discloses that the filled paper composition is characterized by having increased strength compared to a corresponding conventionally filled paper containing the same amount of the same filler. (Column 3, Lines 34-37). Allan further discloses that the filler is formed in situ as an insoluble precipitate in an aqueous system. (Column 3, Lines 37-38). Allan lists magnesium ammonium phosphate and manganese ammonium phosphate among over 80 examples of precipitates used as fillers. (Columns 7-8, Table 1). Allan discloses that the concentration of salt or salts in the aqueous solution can vary from about 1% to about 40%. (Column 9, Lines 16-17). There is no suggestion in Allan of cigarette paper or wrappers of smoking articles.

Again, Claim 2 recites a wrapper of a smoking article of an electrical smoking system wherein tobacco is contained by the wrapper, the wrapper comprising a cellulosic web material and at least one filler therein, the filler being effective to

reduce the content of gaseous components in the smoke produced upon combustion/pyrolysis of the smoking article in the electrical smoking system, wherein the filler includes ammonium-containing compound filler particles in an amount effective to reduce aldehyde content in the mainstream smoke produced upon combustion/pyrolysis of the smoking article. The electrical smoking system does not produce sidestream smoke.

Claim 26 recites a web of a cigarette of an electrical smoking system comprising a cellulosic web material and a filler consisting essentially of magnesium ammonium phosphate and/or calcium ammonium phosphate. The electrical smoking system does not produce sidestream smoke.

The Official Action asserts, "While not specifically articulated as such, the paper of Allan is capable of being used as a wrapper for a smoking article." (Official Action at Pages 3-4). However, Allan fails to suggest porous wrapper material suitable for smoking articles, such wrapping materials having porosity to achieve CORESTA values (*cf.* Claims 7-8) or burn additives (*cf.* Claims 9-10). Allan instead discloses a high strength paper intended as (1) fine papers, used for printing and writing (Column 9, Line 66 – Column 10, Line 13), (2) unbleached kraft paper, used for paper products such as paper bags and wrapping paper (Column 10, Lines 14-22), and (3) newsprint (Column 10, Lines 23-34).

Applicants respectfully submit that Allan does not disclose or suggest all the claim limitations. Despite the assertion in the Official Action that "the paper of Allan is capable of being used as a wrapper for a smoking article," as noted above, Applicants respectfully submit there is no suggestion in Allan that the paper disclosed therein may suitably or appropriately be used as a wrapper or web of a

cigarette or smoking article, specifically for a cigarette or smoking article of an electrical smoking system, which does not produce sidestream smoke. Furthermore, Allan does not disclose or suggest a combination including ammonium-containing compound filler particles in an amount effective to reduce aldehyde content in the mainstream smoke produced upon combustion/pyrolysis of the smoking article.

For at least all of the above-noted reasons, Applicants respectfully submit that Claims 2-6, 12-14, 16, 17, and 26 are patentable over Allan. Accordingly, Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

BUCHANAN INGERSOLL P.C. (INCLUDING ATTORNEYS FROM BURNS, DOANE, SWECKER & MATHIS, L.L.P.)

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